CLAIMS

What is claimed is:

1. Apparatus for timing recovery of vestigial sideband (VSB) modulated signals comprising:

a narrow band pass filter adapted to receive a baseband VSB signal having a positive-frequency signal edge and provide a portion of the positive-frequency signal edge; and

a non-linear transformer adapted to receive said signal portion and provide a timing-retrievable signal adapted for retrieval of timing information therefrom.

2. Apparatus according to claim 1 and further comprising a loop filter adapted to receive said timing-retrievable signal and average said timing-retrievable signal to provide a timing correction signal.

3. Apparatus according to claim 1 wherein the pass band of said band pass filter generally encompasses said positive-frequency signal edge, and wherein the center frequency of said positive-frequency signal edge is included in said signal portion.

4. Apparatus according to claim 3 wherein said signal portion includes a nonzero band of frequencies of said positive-frequency signal edge frequency.

5. Apparatus according to claim 1 wherein said non-linear transformer is adapted to square said signal portion thereby providing a complex signal having a real and an imaginary component and provide said imaginary component as said

timing-retrievable signal.

6. A method for timing recovery of vestigial sideband (VSB) modulated signals, the method comprising:

filtering a baseband VSB signal having a positive-frequency signal edge to provide a portion of said positive-frequency signal edge; and

non-linearly transforming said signal portion to provide a timing-retrievable signal adapted for retrieval of timing information therefrom.

7. A method according to claim 6 and further comprising averaging said timing-retrievable signal to provide a timing correction signal.

8. A method according to claim 6 wherein said filtering step provides the center frequency of said positive-frequency signal edge included in said signal portion

9. A method according to claim 8 wherein said filtering step provides a nonzero band of frequencies of said positive-frequency signal edge frequency included in said signal portion.

10. A method according to claim 6 wherein said transforming step comprises squaring said signal portion, thereby providing a complex signal having a real and an imaginary component, and providing said imaginary component as said timing-retrievable signal.